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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/652,150	08/31/2000	Kazuhiro Hoshino	SON-1894	2607

7590 08/27/2004
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EXAMINER

WILSON, JACQUELINE B

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 08/27/2004

8

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/652,150

Applicant(s)

HOSHINO ET AL.

Examiner

Jacqueline Wilson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6-7</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The disclosure is objected to because of the following informalities:

Page 4, line 7, "o" should be changed to --of--;

Page 11, line 15, "he" should be changed to --the--.

Appropriate correction is required.

Claim Objections

3. Claims 5-9 are objected to because of the following informalities:

Claims 5-9 recite "the element". It is unclear how "the element" relates to "the imaging element". Please change "the element" to --the imaging element--.

Claim 7 recites the limitation "the connecting portion" in line 3.

Please change "the connecting portion" to --a connecting portion--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Ueda (US 6,122,009).

Regarding Claim 1, Ueda teaches a camera module comprising a substrate (fig. 55, element 1) provided with a through-hole (3 and 231), a light receiving portion (referred to as pixels, col. 2, lines 14-15), an imaging element flip chip mounted on one side of the substrate (col. 27, lines 62-67) such that the light receiving portion is exposed through the through-hole (see fig. 55), and a

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lens unit (4) mounted on the other side of the substrate so as to cover the space over the light receiving portion of the imaging element.

Claim 2 is analyzed and discussed with respect to Claim 1. (See rejection of Claim 1 above.)

Regarding Claim 3, Ueda teaches an optical module comprising a substrate (1) provided with a through-hole (231) for light transmission, an optical function portion (referred to as pixels, col. 2, lines 14-15), an optical element flip chip (col. 27, lines 62-67) mounted on one side of the substrate such that the optical function portion is exposed through the through-hole (see fig. 55), and a lens unit mounted on the other side of the substrate (4) so as to cover the space over the optical function portion of the optical element.

6. Claim 4 is rejected under 35 U.S.C. 102(e) as being anticipated by Sako et al. (US 6,724,503).

Sako et al teaches an imaging element (6) having on one side a light receiving portion (referred to as image sensor chips 5) and on the other side opposite to the light receiving portion a shielding layer (61; col. 3, lines 17-26).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to

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be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda in further view of Sako et al. (US 6,724,503).

Regarding Claim 6, Ueda teaches an imaging device comprising a substrate (fig. 55, element 1) having a through-hole (231) for light transmission, and an imaging element (12) having on one side a light receiving portion (referred to as pixels, col. 2, lines 14-15), flip chip mounted (col. 27, lines 62-67) on the one side of the substrate such that the light receiving portion is exposed through the through-hole (see fig. 55). However, Ueda does not specifically disclose a shielding layer on the back surface of the element on the opposite side of the light receiving portion. Sako et al teaches covering a light shielding layer (fig. 4, elements 61 and 4) on the reverse side of an image sensor board (6). This blocks out certain amounts of light that passes through the image sensor board thereby enhancing the image reading quality provided by an image sensor (col. 2, lines 2-6). Therefore, it would have been obvious to modify Ueda with Sako et al by including a light shielding layer on the back surface of the imaging element for the purpose of prevent unwanted light from effecting the accumulated charge.

Claim 5 is analyzed and discussed with respect to Claim 6. (See rejection of Claim 6 above.)

Regarding Claim 7, Ueda does not specifically disclose a black resin applied to the periphery of the imaging element. However, Sako et al teaches it

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is well known to use a casing (4) formed of a black synthetic resin applied to the periphery of the imaging element (see fig. 4) so as to cover the side surface and the back surface of the imaging element, a part of the resin constituting the shielding layer (see fig. 4, elements 61 and 4). This prevents unwanted light from affecting the quality of the image signal. By including this black resin on the periphery of the imaging element of Ueda including the connecting portion between the substrate and the imaging element by the flip chip mounting provides light restriction from all sides of the imaging element except for the side for receiving incoming light. Therefore, it would have been obvious to one having ordinary skill in the art to include a black resin applied to the periphery of the imaging element including the connecting portion between the substrate and the imaging element.

Regarding Claim 8, Ueda teaches camera module comprising a substrate (fig. 55, element 1) having a through-hole (231) for light transmission, an imaging element (12) having on one side a light receiving portion (referred to as pixels, col. 2, lines 14-15), flip chip mounted (col. 27, lines 62-67) on the one side of the substrate such that the light receiving portion is exposed through the through-hole (see fig. 55), and a lens unit mounted on the other side of the substrate (4). However, Ueda does not specifically disclose a shielding layer on the back surface of the element on the opposite side of the light receiving portion. Sako et al teaches covering a light shielding layer (fig. 4, elements 61 and 4) on the reverse side of an image sensor board (6). This blocks out certain amounts of light that passes through the image sensor board thereby enhancing the image

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reading quality provided by an image sensor (col. 2, lines 2-6). Therefore, it would have been obvious to modify Ueda with Sako et al by including a light shielding layer on the back surface of the imaging element for the purpose of prevent unwanted light from effecting the accumulated charge.

Claim 9 is analyzed and discussed with respect to Claim 8. (See rejection of Claim 8 above.)

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacqueline Wilson whose telephone number is (703) 308-5080. The examiner can normally be reached on 8:30am-5:00pm (alternate Fridays off).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR

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system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JBW
08/10/04


AUNG MOE
PRIMARY EXAMINER